

ABSTRACT OF THE DISCLOSURE

In at least one embodiment, the invention is a heat exchanger with increased stiffness to prevent buckling of the core and which carries externally produced loads without damage to the core. In some embodiments, the present invention is a heat exchanger having a core with a heat exchange portion, and a shaft with at least part of it positioned in the core to increase the stiffness of the core. The shaft is positioned at least adjacent to the heat exchange portion of the core. The shaft is also located to limit movement of the heat exchange portion and to receive loads from the heat exchange portion. The shaft can be positioned through some or the entire heat exchange portion of the core. In another embodiment, the heat exchanger includes a core, a duct in fluid communication with the core, a load bearing member positioned adjacent to the core, and a mount which attaches the duct to the load bearing member. By connecting the duct to the load bearing member, the duct can transfer loads to the load bearing member. This protects the core being damaged by loads applied to the duct. The mount restrains the duct so to transfer loads, from the duct to the load bearing member. Such loads can be from external sources, such as inertia loads and vibration loads.